SECTION 1: Identification

1.1 GHS Product identifier

Product name Lead bis(dimethyldithiocarbamate)

1.2 Other means of identification

Product number -
Other names Lead bis(dimethyldithiocarbamate)

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research uses.
Uses advised against no data available

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s) No symbol.
Signal word No signal word
Hazard statement(s) none
Precautionary statement(s)
Prevention none
Response none
Storage none
Disposal none

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Lead bis(dimethyldithiocarbamate)	Lead bis(dimethyldithiocarbamate)	19010-66-3	242-748-2	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to a related compound include reddening and swelling of the eyes and skin, blisters, tearing, runny nose, dry throat and chest discomfort. Inhalation may cause sneezing and coughing. Other symptoms include irritation of the skin, eyes, mucous membranes and respirator tract. Exposure can cause conjunctivitis, erythema, rapid pulse, dizziness, urticaria, intolerance to alcohol, palpitation and hypotension. It may also cause vasodilation of the face and neck, tachycardia, tachypnea, cardiac arrhythmias, pallor, hypertension, convulsions, myocardial infarction, optic neuritis, peripheral neuropathy, hypersensitivity hepatitis, fatigue, sleepiness, headache, chromosomal aberrations (rare) and damage in the nerve cells of the cerebral cortex. Other symptoms include clinical and subclinical liver dysfunction and asthenia, thoracic pain, skin lesions, myocardial dystrophia and enlargement of the thyroid. It may cause reduced potency, gastrointestinal disorders, unpleasant taste, lowered blood pressure, mild confusion, lethargy, impaired memory span, bizarre behavior, emotional lability, ataxia, hallucinations, uncontrollable arm movements, irritability, speech difficulty, drowsiness, loss of libido, psychoses (rare), Parkinsonian tremor, neuropsychiatric effects, anorexia, weight loss, emesis, coma, delirium, catatonia, suppression of the tendon reflexes, hypotonia, flaccid paralysis and death. It may also cause hyperventilation, sweating, breathlessness, air hunger, chest pain, central nervous system depression and rash. Pulmonary damage may also occur. Diarrhea and allergic eczema have been reported. Photophobia and skin sensitization are also symptoms. Inhalation of a related compound after alcohol consumption has caused nausea, vomiting and flushing. It also causes collapse. Other symptoms following alcohol ingestion include gastric pain, hyperirritability, fine tremor of the fingers and tongue, elevated blood pressure, slight fever, moderate lymphopenia;

albumin, urobilinogen and numerous casts in the urine, liver enlargement, ulcers of the oral cavity and goiters. Symptoms of exposure to this type of chemical may include abdominal pain or discomfort, colic, constipation, metallic taste, nausea, vomiting, lassitude, insomnia, weakness, joint and muscle pains, lead line on the gums, pyorrhea, abdominal tenderness, basophilic stippling, anemia, slight albuminuria and increased urinary excretion. Other symptoms of exposure to this type of chemical may include black stools, oliguria, collapse, apathy, loss of recently developed skills, nervousness, vague pains in the arms and legs, incoordination, sensory disturbances of the extremities, paralysis of extensor muscles of arms and legs with wrist and foot drop, disturbance of menstrual cycle, abortion, stupor, encephalopathy, papilledema and paralysis of the cranial nerves. Exposure may also cause nightmares, muscular weakness, restlessness, anxiety, hypothermia, bradycardia, delusions, exaggerated muscular movements and a maniacal state. It may also cause seizures and cardiorespiratory arrest. Chronic exposure may cause severe damage to blood-forming, nervous system, urinary and reproductive systems; excessive tiredness numbness, hyperactivity, damage to the central nervous system, feeling of dull ness, kidney disease, permanent kidney damage, birth defects, stillbirth and decreased hemoglobin. It causes decreased sex drive, impotence and sterility in men. In women, it may cause decreased fertility. ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits very toxic fumes of lead, nitrogen oxides and sulfur oxides. Ingestion of alcoholic beverages can result in potentially serious toxic effects after exposure (including topical) of this type of compound. (NTP, 1992)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Lead and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Extinguishant: Dry sand, dry dolomite, or dry graphite. Inorganic lead

5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting.

6.3 Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Lead bis(dimethyldithiocarbamate)
CAS No.	19010-66-3

Component	Lead bis(dimethyldithiocarbamate)
CAS No.	19010-66-3
	NIOSH considers "Lead" to mean metallic lead, lead oxides, and lead salts (including organic salts such as lead soaps but excluding lead arsenate). Recommended Exposure Limit: 10 hr Time-Weighted Avg: 0.050 mg/cu m /Lead/ Air concentrations should be maintained so that worker blood lead remains less than 0.06 mg Pb/100 g of whole blood. /Lead/

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	PHYSICAL DESCRIPTION: White to off-white powder. (NTP, 1992)
Colour	White powder
Odour	no data available
Melting point/freezing point	590Â° F (NTP, 1992)
Boiling point or initial boiling point and boiling range	no data available
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 0.1 mg/mL at 73Â° F (NTP, 1992)
Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	2.43 (NTP, 1992)
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic fumes.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Combustible when exposed to heat or flame.LEAD DIMETHYLDITHIOCARBAMATE is a organometallic with thio carbamate chelating group. Flammable gases are generated by the combination of thiocarbamates and dithiocarbamates with aldehydes, nitrides, and hydrides. Thiocarbamates and dithiocarbamates are incompatible with acids, peroxides, and acid halides. Organometallics are strongly reactive with many other groups. Incompatible with acids and bases. Organometallics are good reducing agents and therefore incompatible with oxidizing agents. Often reactive with water to generate toxic or flammable gases. Organometallics containing halogens (fluorine, chlorine, bromine, iodine) bonded to the metal typically with generate gaseous hydrohalic acids (HF, HCl, HBr, HI) with water.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers, hydrogen peroxide, acids. Lead

10.6 Hazardous decomposition products

When heated to decomposition, it emits very toxic fumes of /lead, nitrogen oxides and sulfur oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral > 10 mL/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

There is limited evidence in humans for the carcinogenicity of inorganic lead compounds. ... There is sufficient evidence in experimental animals for the carcinogenicity of inorganic lead compounds. There is sufficient evidence in experimental animals for the carcinogenicity of lead acetate, lead subacetate, lead chromate, and lead phosphate. There is inadequate evidence in experimental animals for the carcinogenicity of lead oxide and lead arsenate. ... There is inadequate evidence in experimental animals for the carcinogenicity of lead powder. Overall evaluation Inorganic lead compounds are probably carcinogenic to humans (Group 2A). Inorganic lead compounds

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

The substance may have effects on the blood and kidneys. This may result in anaemia and kidney impairment.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20Â°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

Lead dimethyldithiocarbamate is reported to be non-bioaccumulative in fish(1).[(1) ECCC; Results of DSL Categorization. Environment and Climate Change Canada. Available from, as of August 2, 2016

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: no data available IMDG: no data available IATA: no data available

14.2 UN Proper Shipping Name

ADR/RID: no data available IMDG: no data available IATA: no data available

14.3 Transport hazard class(es)

ADR/RID: no data available IMDG: no data available IATA: no data available

14.4 Packing group, if applicable

ADR/RID: no data available IMDG: no data available IATA: no data available

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Lead bis(dimethyldithiocarbamate)	Lead bis(dimethyldithiocarbamate)	19010-66-3	242-748-2
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Health effects of exposure to the substance have not been investigated adequately.